

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
30 March 2006 (30.03.2006)

PCT

(10) International Publication Number
WO 2006/033285 A1

(51) International Patent Classification:
H01L 51/50 (2006.01)

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:
PCT/JP2005/017076

(22) International Filing Date:
9 September 2005 (09.09.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2004-278259 24 September 2004 (24.09.2004) JP

(71) Applicant (for all designated States except US): SEMI-
CONDUCTOR ENERGY LABORATORY CO., LTD.
[JP/JP]; 398, Hase, Atsugi-shi, Kanagawa 2430036 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): KUMAKI, Daisuke.
SEO, Satoshi [JP/JP]; c/o SEMICONDUCTOR ENERGY
LABORATORY CO., LTD., 398, Hase, Atsugi-shi, Kanaga-
gawa 2430036 (JP).

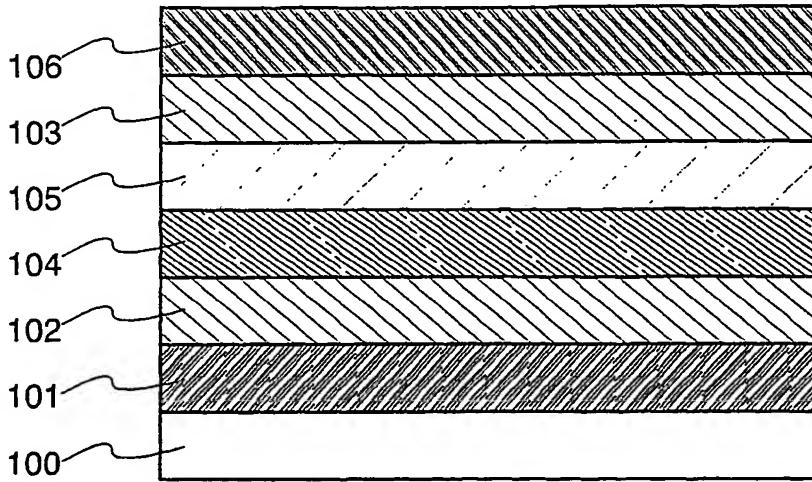
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: LIGHT EMITTING DEVICE



(57) Abstract: An object of the present invention is to provide a light emitting element or a light emitting device that can be formed without any regard for a work function of an electrode. Another object of the invention is to provide a light emitting element or a light emitting device in that the range of choice for a material of an electrode can be widened. In an aspect of the invention, a light emitting device includes first, second and third layers between mutually-facing first and second electrodes. The first layer has a donor level. The second layer is a single layer or a laminated body containing a light emitting substance. The third layer has an acceptor level. When a potential of the second electrode is set higher than that of the first electrode, holes generated in the second layer are injected in the third layer.

WO 2006/033285 A1

THIS PAGE BLANK (USPTO)